

Final Exam P1

THE ARAB BOARD FOR MEDICAL SPECIALIZATIONS
SCIENTIFIC COUNCIL OF ANAESTHESIA

2809/1



15
2809/1

Final exam - Paper One
26th October, 2009
9-11 A.M

NAME:
NUMBER:
CENTER:

The Arab League
Council of Arab Health Ministers
The ARAB BOARD OF MEDICAL SPECIALIZATIONS
Scientific council of Anesthesia

INSTURCTIONS FOR THE EXAM

1. Mark your number and write your name
2. Be sure to give all papers (questions & answers sheets) to the supervisor before you leave the exam room. Any missing paper may oblige us to cancel your examination.
3. Time allowed: **TWO HOURS.**
4. You are not allowed to leave the examination hall before 30 minutes have passed.
5. If you have an urgent need to talk to the supervisor or to leave the room for any reason, you have to raise your hand (do not ever talk) until he comes and responds to your request.
6. Try to answer all the questions, as there is no penalty for wrong answers.
7. This book contains / / numbered pages. Verify the number of pages. Be sure that there are no repeated pages or missing ones.

This paper consists of 75 multiple-choice questions. There is only one correct answer for each question. Select the single most appropriate answer and mark it on the answer sheet.

GOOD LUCK

1- Which of the following is most closely related to slow-wave sleep?
(SWS)

- NMS
Q80/P85
- A- Dreaming
 - B- Atonia
 - ☒ C- Bed-wetting
 - D- High-frequency electroencephalogram (EEG) waves
 - E- Irregular heart rate

2- All the following opiate receptors are correctly matched with their physiological effect EXCEPT:

- A- Mu 1 - analgesia
- B- Mu 2 - sedation
- C- Kappa - spinal analgesia
- D- Sigma - dysphoria
- ☒ E- Kappa - miosis

3- The major area of airway resistance during breathing is located in the:

- NMS
Q12/P187
- A- Oropharynx
 - B- Trachea and large bronchi
 - ☒ C- Intermediate-sized bronchi
 - D- Bronchioles less than 2 mm in diameter
 - E- Alveoli

4- Stimulation of the high-pressure baroreceptors is associated with:

- A- An increase in cardiac contractility
- B- An increase in heart rate
- ☒ C- An increase in the discharge rate of vagal efferent cardiac neurons
- D- A decrease in systemic blood pressure
- E- Stimulation of the vasopressor centre

5- The rate of lymph flow in human is approximately:

- NMS
Q7/P140
- A- L/day
 - B- 100-200 ml/day
 - C- 10-20 ml/hour
 - ☒ D- 1-2 L/day
 - E- 1-2 ml/hour

6- Which of the following secretions is most dependent on vagal stimulation?

- NMS
Q1/P328
- ☒ A- Saliva
 - ☐ B- Hydrochloric acid
 - ☐ C- Pepsin
 - ☐ D- Pancreatic juice
 - ☐ E- Bile

7- Which one of the following conditions causes a decrease in the extracellular fluid (ECF) volume, an increase in the intracellular fluid (ICF) volume and a decrease in the osmolar concentration of both compartments?

- NMS
Q17/P
- ☐ A- Hyperosmotic dehydration
 - ☒ B- Hyposmotic dehydration
 - ☐ C- Isosmotic dehydration
 - ☐ D- Hyperosmotic overhydration
 - ☐ E- Hyposmotic overhydration

8- Which one of the following proteins is important for skeletal muscle contraction but not for smooth muscle contraction?

- NMS
Q20/P84
- ☐ A- Actin
 - ☐ B- Myosin
 - ☒ C- Troponin
 - ☐ D- Myosin-adenosine triphosphatase (ATPase)
 - ☐ E- Ca^{2+} ATPase

9- Airway resistance can be reduced by EXCEPT:

- NMS
Q15/P187
- ☐ A- Increasing vagal impulses to the lung
 - ☐ B- Administration of beta-adrenergic blocking drug
 - ☐ C- Decreasing the radial traction exerted by lung tissue
 - ☐ D- Performing a maximal forced expiration
 - ☒ E- Increasing lung volume

10- Which of the following endocrine organs is larger at birth than in adulthood?

- NMS
Q11/P48
- ☐ A- Hypophysis
 - ☐ B- Thyroid gland
 - ☒ C- Adrenal gland
 - ☐ D- Parathyroid glands
 - ☐ E- Endocrine pancreas

11- Which of the following statements best characterize potentiation?

- ☒ A- It occurs if a drug lacking an effect of its own increases the effect of a second, active drug
- ☐ B- It occurs if two drugs with the same effect, when given together, produce an effect that is equal in magnitude to the sum of the effects when the drugs are given individually
- ☒ C- It occurs if two drugs with the same effect, when given together, produce an effect that is greater in magnitude than the sum of the effects when the drugs are given individually
- ☐ D- It occurs if two drugs with the same effects, when given together, produce an effect that is equal in magnitude to the effect of each drug given alone
- ☐ E- None of the above statements correctly characterizes potentiation

12- Pharmacological doses of glucocorticoids can result in all of the following effects EXCEPT:

- ☒ A- Stimulation of leukocyte migration
- ☐ B- Stabilization of lysosomal membranes
- ☐ C- Reduced activity of fibroblasts
- ☐ D- Reversal of histamine-induced increase in capillary permeability
- ☐ E- Inhibited antibody synthesis

13- Which of the following drugs, if given concomitantly with warfarin, would require an increase in warfarin dosage?

- ☐ A- Aspirin
- ☒ B- Barbiturates
- ☐ C- Disulfiram
- ☐ D- Phenylbutazone
- ☐ E- Trimethoprim-sulfamethazole

14- Characteristics of aspirin include all of the following EXCEPT:

- ☐ A- Its analgesic, antipyretic and anti inflammatory actions are due to inhibition of prostaglandin synthesis
- ☐ B- Toxic doses are capable of producing respiratory and metabolic acidosis
- ☐ C- It can increase mean bleeding time
- ☐ D- Excretion can be increased by alkalinizing urine
- ☒ E- Low doses increase urate excretion

15- Metoclopramide can be used to treat all of the following conditions EXCEPT:

- ☒ A- Diabetic gastroparesis
- ☐ B- Chemotherapy-induced vomiting
- ☐ C- Gastroesophageal reflux disease
- ☒ D- Peptic ulcer disease
- ☐ E- Radiation-induced vomiting

16- Preload can be reduced by all the following drugs EXCEPT:

- ☐ A- ACE inhibitors
- ☒ B- Nitrates
- ☒ C- Hydralazine
- ☒ D- Adenosine
- ☒ E- Thiazide

17- Anaesthesia machine checkout recommendation includes (among others) all the following EXCEPT:

- ☒ A- Manual emergency ventilation equipment
- ☒ B- Oxygen supply
- ☒ C- Leak free machine and breathing system
- ☒ D- Nitrous oxide supply
- ☒ E- Calibration of oxygen monitor

18- All of the following are physiological responses to airway manipulation EXCEPT:

- ☒ A- Laryngospasm is a forceful involuntary spasm of the laryngeal musculature caused by sensory stimulation of the recurrent laryngeal nerve
- ☐ B- Laryngoscopy leads to hypertension and tachycardia
- ☐ C- The haemodynamic changes caused by laryngoscopy can be attenuated by I. V. administration of fentanyl (0.5-1.0 microgram/Kg) 4-5 min before laryngoscopy
- ☒ D- Cardiac dysrhythmias during laryngoscopy usually indicate light anaesthesia
- ☐ E- Calcium channel blockers can be used to attenuate the transient hypertensive response associated with laryngoscopy

19- In an awake, healthy individual assuming the lateral position, all the following are true EXCEPT:

- ☒ A- The dependent lung has less ventilation
- ☒ B- The dependent lung has more perfusion
- ☒ C- V/Q ratio is lesser in the dependent lung
- ☒ D- PO_2 is higher in the lower lung
- ☐ E- $PaCO_2$ is lower in the lower lung

FRC

Helium Paper ONE

dilution

N₂ washout

Body plethysmography

20- Closing capacity, one is true:

- A- Is normally higher than FRC. x
- B- Decreases in supine position = FRC
- C- Decreases with age x
- D- Can be measured by body plethysmography
- E- Equals FRC in infants

by single Breath N₂ washout
by bolus technique

21- All the following are true concerning class 1a anti-arrhythmic drugs, EXCEPT:

- A- Slow depolarisation
- B- Prolong repolarization. ↑ QT ↑ QTc
- C- Increase the action potential duration.
- D- Are indicated for atrial arrhythmias
- E- Have local anaesthetic activity

proarrhythmia

inert tracer gas: Helium
Xenon-argon

22- Ondansetron, all the followings are true, EXCEPT:

- A- Antagonises both peripheral and central 5HT₃ receptors
- B- Undergoes significant hepatic metabolism by hydroxylation
- C- Crosses the blood-brain barrier
- D- Is associated with cardiac arrhythmias = 5-HT + malaise + fatigue
- E- Causes diarrhoea after prolonged usage + headache-dizziness - fever - Drowsy

child - 2-3h
adult - 3-6h
in chemoreceptor trigger zone

23- Sign of hemolytic transfusion reaction under general anesthesia include all the following EXCEPT:

- A- Hemoglobinemia
- B- Bronchospasm
- C- Hypotension
- D- Thrombus formation in large vessels
- E- Tachycardia

24- Decompression sickness, ONE is true:

- A- Is associated with a vascular necrosis of bone
- B- Is due to an alveolar oxygen deficit
- C- Is cured by breathing in a mixture of oxygen and helium
- D- It occurs, no matter the way of ascending.
- E- Is avoided if nitrogen is included in the inspired gas mixture

25- Pancreatitis is associated with all of the following, EXCEPT:

- A- Respiratory distress syndrome
- B- Hypocalcaemia
- C- Alcoholism
- D- Cholelithiasis
- E- Hyperlipidemia

26- In using general anesthesia for laparoscopic cholecystectomy, which is FALSE:

- A- Inhaled nitrous-oxide will diffuse into CO2 containing spaces and increase their volume and pressure
- B- Decrease in FVC and FEV1 post operatively less than in open cholecystectomy
- C- Small but detectable CO2 emboli are common
- D- Minute ventilation will need to be doubled
- E- Neuromuscular blockade should be optimum during gas inflation

27- Which of the following is NOT recommended during pheochromocytoma removal:

- A- Morphine
- B- Fentanyl
- C- Diazepam
- D- Desflurane
- E- Vecuronium

avoid
 1- Succ
 2- Halothane
 3- morphine - pancuronium
 4- all other Histamine
 (Etomidate - morphine - meperidine)
 5- droperidol also E. Gase
best Dys R. phen
 1- Vecuronium
 2- Roc
 3- propofol
 4- dexmedetomidine

28- COPD patient has an altered induction with insoluble agent because of:

- A- Decreased cardiac output
- B- Increased perfusion
- C- Increased PCO2
- D- Uneven ventilation
- E- Decreased minute volume

29- Old age is associated with all of the following, EXCEPT:

- A- A decreased minimum alveolar concentration (MAC) value for volatile agents
- B- Resistance to non-depolarising drugs
- C- An increased in closing volume
- D- Sensitivity to morphine
- E- Decreased autonomic function and efficiency

30- Increased neonatal depression has been observed after cesarean section in ONE of the following:

- A- General anesthesia compared to regional anesthesia
- B- 8 minutes between induction and delivery
- C- Use of volatile agent
- ☒ D- 4 minutes between uterine incision and delivery
- E- Use propofol compared to thiopental

31- Maternal changes associated with preeclampsia include all the following EXCEPT:

- ☒ A- Increased cardiac output
- B- Decreased renal blood flow
- C- Decreased cerebral blood flow
- D- Decreased hepatic blood flow
- ☒ E- Increased in left ventricular end diastolic pressure

32- Regional anesthesia is contraindicated in ONE of the following:

- A- Vaginal delivery after cesarean
- B- Abruptio placentae
- C- Diagnosis of placenta previa
- D- Eclampsia
- ☒ E- Thrombocytopenia

33- Characteristic features of the myasthenic syndrome include all the following EXCEPT:

- ☒ A- Exercise improve the weakness.
- B- Decreased electromyogram (EMG) voltage
- C- Increase sensitivity to non-depolarising neuromuscular blocking drugs
- D- Post tetanic facilitation
- E- Fade of the EMG

34- The treatment of ventricular tachycardia under anaesthesia without hemodynamic change include all of the following EXCEPT:

- A- Lidocaine (lignocaine)
- B- Amiodarone
- C- Rapid digitalization
- D- Propranolol
- ☒ E- DC shock

35- The hazards of anaesthesia in a patient with chronic renal failure include all of the following EXCEPT:

- A- Left ventricular enlargement ✓
- B- Cardiac tamponade
- C- Hypertension ✓
- D- Pericarditis
- E- Enhanced carotid sinus activity

36- Chronic alcohol intake is associated with all of the following EXCEPT:

- A- Malnutrition ✓
- B- Mean corpuscular volume (MCV) of 90
- C- Decreased gastric motility ✓
- D- Decreased stress response to surgery
- E- Increased serum albumin ✓

37- Appropriate management of a female patient with untreated thyrotoxicosis requiring repair of an incarcerated femoral hernia includes:

- A- Intravenous propranolol ✓
- B- Intravenous carbimazole
- C- Spinal anaesthesia
- D- Atropine premedication
- E- Intravenous chlorpromazine

38- Concerning cerebral protection which of the following is NOT CORRECT:

- A- Thiopentone reduces cerebral oxygen consumption by up to 60%
- B- Thiopentone is ineffective if the insult is due to cardiac arrest ✓
- C- The effectiveness of thiopentone is due to a reduction in cerebral blood flow
- D- Thiopentone is more effective if given before the insult
- E- Calcium channel blockers are effective

39- The development of postoperative hypoglycaemia in a diabetic patient after amputation of an infected foot can result from:

- A- The decreased insulin requirement after amputation
- B- The stress response to surgery with release of glucagon
- C- The effect of protamine zinc insulin given 24 h before operation ✓
- D- Septicaemia
- E- Associated hypothermia

40- In patients with long standing Cushing's disease, all the following are associated with a high incidence of perioperative complications EXCEPT:

- A- Hypokalaemia ✓
- B- Muscle wasting ✓
- C- Hypernatraemia ✓
- D- Hypertension ✓
- E- Diabetes mellitus ✓

41- In a patient with sickle cell anaemia:

- A- Epidural analgesia is contraindicated ✓
- B- The haemoglobin concentration should be restored to normal levels prior to surgery ✓
- C- Plasma expanders are contraindicated ✓
- D- Bone pain heralds a sickle cell crisis ✓
- E- Preparation should be made for exchange transfusion of the neonate following delivery to a homozygous mother ✓

42- Postoperative respiratory micro-atelectasis is associated with ONE of the following:

- A- Decreased PaCO₂
- B- Scattered areas of dullness on percussion over the chest
- C- Ground glass appearances on chest X-ray
- D- Use of opioids intra-operatively
- E- Bilateral basal crepitations on auscultation ✓

43- Patients with HELLP syndrome which is FALSE:

- A- Always have a thrombocytopenia
- B- Usually have pre-eclampsia ✓
- C- Usually have a normal APTT ✓
- D- Can present post-partum
- E- Should not have an epidural regional block ✓

44- Oxygen stores

- A- Are increased slightly by pre-oxygenation
- B- Are large because oxygen is so important for cellular function
- C- Depend in part on blood volume and haemoglobin concentration ✓
- D- Are large in pregnant women compared to non-pregnant women
- E- Can be accurately assessed with a pulse oximeter

45- Contraindications to the discharge home of a patient who had a hernia repair under general anaesthesia include all of the following EXCEPT:

- ☒ A- Nausea
- B- Inability to drink liquids without vomiting
- C- Heart rate 50% higher than the preoperative value
- D- Inability to walk due to groin pain
- E- Disorientation to person and place

46- A patient has chronic obstructive pulmonary disease requiring the constant administration of oxygen. He is dyspnoeic at rest and can walk at the most 20 ft before needing to rest. He is scheduled to undergo an exploratory laparotomy because of a small bowel obstruction. He would be classified by the American Society of Anesthesiologists as physical status

- A- III
- B- IIIE
- ☒ C- IVE
- D- V
- E- VE

47- The likelihood of intraoperative awareness under general anesthesia is highest with the use of

- A- Inadequate benzodiazepine doses
- B- High-dose opioids
- ☒ C- Muscle relaxants
- D- No premedication
- E- Dexmedetomidine

48- Coronary perfusion pressure (CPP) is increased as a result of

- ☒ A- Increased diastolic blood pressure (DBP) -
- B- Increased left ventricular end-diastolic pressure (LVEDP)
- C- Systolic hypertension
- D- Tachycardia
- ☒ E- Hypocapnia

49- The minimum number of platelets needed for surgical haemostasis is approximately

- A- 10,000/mm³
- ☒ B- 30,000/mm³
- C- 80,000/mm³
- D- 100,000/mm³
- E- 1,000,000/mm³

50- Hypertension during anaesthesia can be because of all the following EXCEPT:

- ☒ A- Hypocarbia
- B- Preexisting disease
- C- Increased intracranial pressure
- D- Aortic cross-clamping
- E- Drug interaction

51- The unspecific responses suggesting inadequate anaesthetic depth include all the following EXCEPT:

- A- Tachycardia
- B- Hypertension
- ☒ C- Miosis
- D- Sweating
- E- Tearing

52- When regional anaesthesia is compared to general anaesthesia for hip fractures it is associated with all of the following EXCEPT:

- ☒ A- Reduced post-operative morbidity
- B- Reduced blood loss
- C- Reduced risk of DVT
- D- Reduced hospital stay
- E- Better immediate postoperative pain relief

53- Causes of respiratory distress in the neonate Include all of the following EXCEPT:

- A- Unilateral choanal atresia
- B- A tracheo-oesophageal fistula
- C- A diaphragmatic hernia
- D- Necrotising enterocolitis
- ☒ E- A myelomeningocele

~~54-~~ Ankylosing spondylitis, which is FALSE:

- ☒ A- Occurs more frequently in women than men over the age of 40 ✓
- ☐ B- Is associated with low grade pyrexia ✓
- ☐ C- Can present as sciatica ✓
- ☐ D- Can be complicated by arthropathy affecting the hips ✓
- ☐ E- Can be complicated by iritis ✓

55- With regard to dental chair anaesthesia, all of the following are contraindicated EXCEPT:

- ☐ A- Sick cell anaemia ✓
- ☐ B- Angina ✓
- ☒ C- Dental abscess ✓
- ☐ D- Learning difficulties ✓
- ☐ E- Down's syndrome ✓

☒ 56- The clamping of the thoracic descending aorta in aneurysm repair is followed by

- C.V.S
- ☐ A- Immediate hypotension ✓
 - ☒ B- Immediate hypertension ✓
 - ☐ C- Cardiac standstill ✓
 - ☐ D- No change ✓
 - ☐ E- Loss of blood pressure in the right arm ✓

☒ 57- The blood flow during total cardiopulmonary bypass, which is TRUE

- C.V.S
- ☐ A- Is not adjustable ✓
 - ☒ B- Is virtually nonpulsatile ✓
 - ☐ C- Provides a pulsatile pressure ✓
 - ☐ D- Is a pulsatile flow ✓
 - ☐ E- Mimics normal flow in all respects ✓

☒ 58- The most reliable monitor for detection of intra-operative myocardial ischemia is

- C.V.S
- ☐ A- Creatine phosphokinase levels ✓
 - ☐ B- Pulmonary artery catheterization ✓
 - ☒ C- Transoesophageal echocardiography ✓
 - ☐ D- Troponin levels ✓
 - ☐ E- Exhaled nitric oxide ✓

59- A patient with oesophageal obstruction is to have a general anaesthetic for oesophagoscopy. He has had a barium swallow on the previous day. One of the greatest dangers of the planned procedure is

- A- Bleeding
- B- Hypotension
- C- Difficult intubation
- ☒ D- Aspiration
- E- Arrhythmia

60- Mild, accidental hypothermia during the course of major surgery may lead to significant increases in all of the following EXCEPT

- ☒ A- The effect on nondepolarizing muscle relaxant.
- B- The duration of stay in the anaesthetic recovery room. ✓
- C- The incidence of post-operative wound infection. ✓
- D- The incidence of post-operative myocardial ischaemia. ✓
- ☒ E- The incidence of post-operative blood transfusion

61- All of the following consider as the most common complications of electro-convulsive therapy (ECT) EXCEPT:

- A- Dental damage. ✓
- B- Aspiration pneumonitis. ✓
- C- Bronchospasm.
- D- Laryngospasm.
- ☒ E- Hypotension ✓

62- Concerning coronary blood flow one of the following is TRUE

- A- It is approximately 20% of the cardiac output at rest
- B- It is highest during systole ✓
- C- It is reduced during hypoxia
- D- Increased myocardial oxygen demand results in increased oxygen extraction but little increase in coronary blood flow ✓
- ☒ E- It is reduced in aortic stenosis ✓

63- All of the following intravenous fluids have an acidic pH EXCEPT

- A- Haemaccel
- ☒ B- 0.9% saline
- C- 5% glucose in water
- D- 4% glucose in 0.18% saline
- E- Hartmann's (compound sodium lactate) ✓

64- During magnetic resonance imaging, one is TRUE:

- ☒ A- It is noisy ✓
- ☐ B- There is no risk of microshock through pulmonary artery catheters ✓
- ☐ C- Looped fibreoptic cables lead to problems with induced currents ✓
- ☐ D- Non-invasive blood pressure measurement is impossible ✓
- ☐ E- The magnetic field interferes with capnometry. ✓

65- Causes of pseudohyponatremia includes all the following EXCEPT

- ☐ A- Hyperlipidemia
- ☐ B- Hyperproteinemia
- ☒ C- Hypoglycemia
- ☒ D- Glycine therapy during TURP ✓
- ☒ E- Administration of mannitol ✓

66- Features of the transurethral resection of the prostate (TURP) syndrome include all of the following EXCEPT

- ☐ A- Agitation ✓
- ☐ B- Angina ✓
- ☒ C- Bradycardia ✓
- ☐ D- Nausea ✓
- ☒ E- Tinnitus ✓

67- Nasotracheal intubation may be used safely in ONE of the following:

- ☐ A- Fractures of lower cervical spine and ethmoid bone
- ☒ B- A LeFort I fracture of the maxilla ✓
- ☐ C- A LeFort II fracture of the maxilla
- ☒ D- A LeFort III fracture of the maxilla ✓
- ☐ E- Non of the above

68- Surgical correction of scoliosis, all the following are true EXCEPT:

- ☐ A- Carries a risk of spinal cord damage ✓
- ☐ B- Is facilitated by induced hypotension ✓
- ☐ C- Is monitored by somatosensory evoked potentials ✓
- ☒ D- May involve division of the diaphragm ✓
- ☒ E- Usually requires postoperative ventilation for several days ✓

69- All the following are nephrotoxic, EXCEPT:

- A- Aminoglycosides ✓
- B- Isoflurane ✓
- C- Non-steroidal anti-inflammatory drugs (nsaids)
- ☒ D- Angiotensin converting enzyme inhibitor *ACE*
- E- Radiocontrast agents

70- All the following increase the risk of cauda equine syndrome (CES), EXCEPT:

- Q89/P1
Final*
- A- Old age ✓
 - B- The use of epidural adrenaline ✓
 - ☒ C- The lithotomy position ✓
 - D- Spinal cord manipulation ✓
 - E- Later stage ankylosing spondylitis ✓

71- After the onset of one lung anaesthesia pulmonary vasoconstriction in the non-dependant lung is enhanced by ONE of the following:

- ☒ A- A low alveolar oxygen tension in that lung ✓
- B- Inhalational anaesthetic agents
- C- Intravenous anaesthetic agents
- D- Metabolic alkalosis
- E- A constant intravenous sodium nitroprusside infusion

72- Indicate which is TRUE for stellate ganglion:

- ☒ A- Is a fusion of the inferior cervical and first thoracic ganglia ✓
- B- Receives fibers from C4-C5 ✓
- C- Is primarily parasympathetic ganglions ✓
- D- Lies at the level of the ~~C5~~ ^{T1} vertebra ✓
- E- May be blocked with little complication ✓

73- The paramedian approach of lumbar puncture, all the following are true EXCEPT:

- A- The needle penetrate the ligamentum flavum ✓
- B- Lateral or sitting position is satisfactory ✓
- C- The needle does not penetrate interspinous ligament ✓
- ☒ D- It is necessary to flex the spine ✓
- E- The needle enters between the laminae ✓

2009/2

**THE ARAB BOARD OF MEDICAL SPECIALIZATIONS
SCIENTIFIC COUNCIL OF ANAESTHESIA**

***Final exam - Paper Two
26. October. 2009
12-2 P.M***

The Arab League
Council of Arab Health Ministers
The ARAB BOARD OF MEDICAL SPECIALIZATIONS
Scientific council of Anesthesia

INSTURCTIONS FOR THE EXAM

1. Mark your number and write your name
2. Be sure to give all papers (questions & answers sheets) to the supervisor before you leave the exam room. Any missing paper may oblige us to cancel your examination.
3. Time allowed: **TWO HOURS.**
4. You are not allowed to leave the examination hall before 30 minutes have passed.
5. If you have an urgent need to talk to the supervisor or to leave the room for any reason, you have to raise your hand (do not ever talk) until he comes and responds to your request.
6. Try to answer all the questions, as there is no penalty for wrong answers.
7. This book contains / / numbered pages. Verify the number of pages. Be sure that there are no repeated pages or missing ones.

This paper consists of 75 multiple-choice questions. There is only one correct answer for each question. Select the single most appropriate answer and mark it on the answer sheet.

GOOD LUCK

1- All the following are contraindicated in spinal anesthesia EXCEPT:

- MAH 998
206 Explain
- A- Coagulopathy
 - B- Coronary artery disease *
 - C- Bacteraemia
 - D- Hypovolemia
 - E- Demyelinated disease

2- Which of the following is the BEST to decrease cerebral oxygen requirement :

- A- Muscle relaxant
- B- Glucose solution
- C- Anticonvulsant
- D- Barbiturate *
- E- Oxygen therapy

3- Treatment with mannitol may cause all the following EXCEPT:

- MAH 1104
232
- A- Initial hypervolemia
 - B- Increased urine volume
 - ~~C- Hypovolemia~~
 - D- Increased LVEDP (left ventricular end diastolic pressure) *
 - E- A fall in arterial pressure

4- Nitrous oxide should be avoided in patients with:

- A- Brain tumor
- B- Subarachnoid hemorrhage
- C- Closed head injury
- D- Pneumocephaly *
- E- Subdural hematoma

5- Dextrose- containing solutions in neurosurgical patients may lead to ONE of the following:

- A- Excessive diuresis
- B- Exacerbate hyperglycemia *
- C- Produce brain edema
- D- Water retention
- E- Are the fluids of choice

6- Complication associated with the sitting position include:

- A- Sciatic and cranial trauma
- B- Pneumocephalus
- C- Quadriplegia
- D- Airway edema
- E- All mentioned above *

7- Precordial Doppler ultrasonic transducer, used to detect air embolism. One is TRUE:

- A- Can not detect less than 5 ml of air
- B- Should be placed over the right side of the heart *
- C- Is less sensitive than capnography
- D- Is less sensitive than pulse oximetry
- E- It is mandatory to be used in all neurosurgical surgery

8- The first sign of malignant hyperthermia in anesthetized infant is:

- A- Rapid rise in body temperature
- B- Tachycardia *
- C- Hot skin
- D- Arrhythmias
- E- Hot circle absorber

9- The major factor associated with the closure of patent ductus arteriosus (PDA) in the newborn is:

- A- Increased PaCO_2
- B- Decreased PaCO_2
- C- Increased PaO_2 *
- D- Decreased PaO_2
- E- Increased pulmonary artery pressure

10- A 16-year-old Down syndrome patient, is admitted for dental extraction in preoperative preparation, one is TRUE:

- A- Atropine should be avoided
- B- Opioid should be avoided
- C- Neck mobility should be documented *
- D- Heavy sedation is required
- E- Anticonvulsants should be withheld

11- In the cardiac output of the neonate, which is FALSE:

- A- May increase significantly by increase in stroke volume ✓
- B- Is very sensitive to changes in the afterload ✓
- C- Is very sensitive to volume loading ✓
- D- Is reflected by a leftward displacement of the cardiac function curve as compared to adult
- E- Is rate depending cardiac output ✓

12- The metabolic activity of a child:

- A- Is more than that of an adult ✓
- B- Is highest in the first 2 years of life ✓
- C- Is increased by afebrile illness ✓
- D- Rises with onset of puberty ✓
- E- All mentioned are true

13- Premature neonates tend to have all the following, EXCEPT:

- A- Are prone to develop hypocalcaemia ✓
- B- Are sensitive to non-depolarising muscle relaxant drugs ✓
- C- Have reduced insensible water loss ✓
- D- Have increased plasma unconjugated bilirubin levels ✓
- E- Are prone to develop apnoeic spells. ✓

14- The likely results in an elderly, dehydrated man, breathing room air with prolonged bowel obstruction include all of the following EXCEPT:

- A- Respiratory alkalosis ✓
- B- Metabolic acidosis ✓
- C- Hypoxaemia ✓
- D- Uraemia ✓
- E- Anaemia ✓

15- Patients with greater than normal risk of developing gram negative septicaemia include all the following EXCEPT:

- A- Diabetes mellitus ✓
- B- Cirrhosis ✓
- C- Leukaemia ✓
- D- Uraemia ✓
- E- Polycythaemia ✓


16- Likely causes of surgical emphysema in patients with vomiting and abdominal pain and dyspepsia include:

- A- Ruptured trachea
- B- Ruptured oesophagus *
- C- Spontaneous pneumothorax
- D- Pulmonary embolism
- E- Ruptured larynx

17- About The process of red cell transfusion which is FALSE:

- A- The blood compatibility label must be checked to ensure that the blood is correct for the patient
- B- The bag should be inspected to ensure integrity of the plastic casing
- C- Blood left out of the blood fridge for longer than 15 min should be discarded*
- D- The expiry date should be checked
- E- The volume of blood transfused should be recorded once administered

18- All The following can be used to enhance endogenous antioxidant defenses EXCEPT:

- 
- A- N-acetylcysteine
 - B- Ascorbic acid (vitamin C)
 - C- Albumin *
 - D- Dimethylsulphoxide
 - E- Lazaroids

19- Mixed venous oxygen saturation is reduced in all of the following EXCEPT:

- A- Anaemia ✓
- B- Hypothermia ✓
- C- Sepsis *
- D- Shivering
- E- Low cardiac output

20- Hypofibrinogenaemia is associated with all of the following EXCEPT:

- A- Amniotic fluid embolism ✓
- B- Incompatible blood transfusion ✓
- C- Septic abortion ✓
- D- Prostate resection ✓
- E- Patients receiving oral contraceptive therapy*

21- In children, death due to severe burns on the second week after injury is often due to:

- A- Anaemia
- B- Hepatic failure
- C- Haemoconcentration
- D- Toxaemia from protein destruction
- E- Infection of the burned area *

22- After placement of a pulmonary artery flotation catheter, All of the followings can be measured directly or derived EXCEPT:

- A- Oxygen consumption VO_2 (ml/min) ✓
- B- Systemic vascular resistance index (SVRI) ✗
- C- Pulmonary venous admixture or shunt fraction (QS/QT) ✓
- D- Left ventricular stroke work index ✓
- E- Left ventricular end diastolic volume ✓

23- The following are indications for hyperbaric oxygen Therapy EXCEPT:

- A- Narcotising soft tissue infections ✓
- B- Progressive myopia *
- C- Decompression sickness
- D- Clostridia infections
- E- Carbon monoxide poisoning


24- The operation of the standard cylinder pressure gauge is based on the:

- A- Hagen-Poiseuille law ✗
- B- Fixed orifice principle ✗
- C- Bernoulli principle ✓
- D- Bourdon tube principle ✓
- E- Critical flow rate principle ✗

25- Concerning a vapouriser for use inside the circle system, all the following are true EXCEPT:

- A- It must be temperature compensated
- B- It is better situated on the inspiratory limb
- C- Its internal volume must be greater than the patient's tidal volume *
- D- Accurate calibration is essential
- E- It should be capable of delivering high concentrations of anaesthetic vapour


26- Trans-oesophageal echocardiography, which is FALSE:

- 
- A- Is helpful in assessing myocardial contractility
 - B- Is helpful in assessing myocardial ischaemia
 - C- Can give an index of stroke volume
 - D- Is useful for observing tricuspid regurgitation
 - E- Can be used to measure intraventricular pressure changes
- ST cor 10*
50 x 140
100


27- In non-invasive blood pressure measurement which is FALSE:

- A- The cuff width should be 20% greater than the arm diameter
- B- A too narrow cuff will tend to under read blood pressure
- C- There are five korotkoff sounds
- D- Doppler frequency shift occurs with blood flow
- E- An automated monitor detects pulsations within the cuff as it deflates to systolic pressure, which increases in amplitude until mean arterial blood pressure is reached


28- Inadequate analgesia over the radial artery at the wrist during brachial plexus block can be due to failure to block the:

- 
- A- Radial nerve
 - B- Medial cutaneous nerve
 - ☒ C- Musculocutaneous nerve
 - D- Median nerve
 - E- Ulnar nerve
- 100*

29- The dose of bupivacaine required for spinal anaesthesia is reduced in the pregnant patient at term because of decreased:

- 
- A- CSF volume
 - B- Spinal cord blood flow
 - C- Metabolism of bupivacaine
 - D- CSF pressure
 - E- Turnover of CSF

30- The application of a topical anaesthetic agent to the pyriform fossa produces anaesthesia to the:

- 
- A- Recurrent laryngeal nerve
 - B- Glossopharyngeal nerve
 - C- Hypoglossal nerve
 - D- Superior laryngeal nerve
 - E- Ansa hypoglossi

31- The pudendal nerve block provides analgesia to all of the following EXCEPT:

- A- Cervix
- B- Peroneal body
- C- Labia minora
- D- Labia majora
- E- Anterior vaginal wall

32- Concerning the anatomy of peripheral nerves:

- A- The lumbar plexus is derived from T12 to L4
- B- The cervical plexus is derived from C1, C2 and C3 spinal nerves
- C- The femoral nerve supplies the skin over the anterior aspect of the thigh
- D- The posterior tibial nerve is located between the lateral malleolus and the Achilles tendon
- E- The peroneal nerves (superficial and deep) supply the dorsum of the foot

33- Important landmarks to blockade of the median nerve at the elbow include the:

- A- Basilic vein
- B- Olecranon process
- C- Medial head of the triceps
- D- Brachial artery
- E- Cephalic vein

34- After a successful supraclavicular brachial plexus block, sensory anaesthesia will usually be incomplete on the:

- A- Medial aspect of the forearm
- B- Lateral aspect of the forearm
- C- Lateral aspect of the upper arm
- D- Medial aspect of the arm
- E- Back of elbow

35- The dermatome level at the nipple line is:

- A- C8
- B- T2
- C- T4
- D- T6
- E- T8

36- If a line is drawn around the neck at the level of the lower border of the cricoid cartilage, it will mark the level of the transverse process of the:

- A- Second cervical vertebra
- B- Third cervical vertebra
- C- Fourth cervical vertebra
- D- Fifth cervical vertebra
- ☒ E- Sixth cervical vertebra

37- Blood gas results showing PaO₂ 60 mmHg, PaCO₂ 30mmHg, pH 7.4 are consistent with:

- A- Compensated metabolic alkalosis
- B- Alveolar hypoventilation
- C- Pulmonary atelectasis
- D- Acute coronary occlusion
- E- Residence at high altitude for 48h

38- The likely complications of laparoscopy include all of the following EXCEPT:

- ☒ A- Pneumothorax
- ☒ B- Shoulder pain
- ☒ C- Gas embolism
- ☒ D- Aspiration
- ☒ E- Left bundle branch block

39- Causes of increased bleeding during head and neck surgery include all of the following EXCEPT:

- A- Hypoxia
- ☒ B- Hypocarbida
- C- Respiratory obstruction
- D- Chronic aspirin therapy preoperatively
- E- Transfusion of excessive quantities of blood

40- Concerning crush syndrome, all are true EXCEPT:

- A- Results from extensive tissue ischaemia
- B- Is seen in compartment syndrome
- C- Results in myoglobinuria
- D- May require deliberate acidification of the urine to prevent renal failure
- E- Commonly causes disseminated intravascular coagulation

41- Complications of a subtotal thyroidectomy include all of the following EXCEPT:

- A- Aphonia ✓
- B- Asphyxia ✓
- C- Recurrence of thyrotoxicosis ✓
- D- Myxoedema
- E- Hypercalcaemia ✗

42- An elderly patient with obstructive jaundice is admitted to the ICU following percutaneous biliary stenting. The temperature is 39.5° , the hemodynamic values are HR = 120 bpm, BP = 80/40 mmHg, CVP = 1 mmHg, PAP = 20/5 mmHg, PAOP = 4 mmHg, CI = 2 L/min/m². the intervention that should be performed first is:

- A- Calculation of SVR ✓
- B- Volume resuscitation ✓
- C- Administration of dopamine ✓
- D- Administration of phenylephrine ✓
- E- Administration of broad-spectrum antibiotics ✓

43- A 30-year-old construction worker is admitted to the ICU with multiple traumatic injuries. 2 days following admission, he becomes anuric with a serum CPK level equal to 30000 U/L expected finding include all the following EXCEPT:

- A- Hyperkalemia ✓
- B- Metabolic acidosis ✓
- C- Hypophosphatemia ✓
- D- Muscle necrosis ✓
- E- Positive urine myoglobine ✓

44- The treatment of the previous patient in question 118 includes all of the following EXCEPT:

- ⑤
- A- Urine alkalization ✗
 - B- Osmotic diuresis ✗
 - C- Calcium administration ✗
 - D- Fluid restriction ✗
 - E- Dialysis ✓

45- The neurologic symptom in a patient with a blood carboxyhemoglobine level of 50% is:

- A- Headache 10%
- B- Nausea 20%
- C- Confusion 30% (40% normal distribution)
- * D- Coma 50%
- E- Death 60%

46- Therapies which may diminished mortality rate in severe sepsis include :

- A- Activated protcine C
- B- Strict glycemic controle
- C- Early fluid resuscitation *
- * D- Hydrocortisone
- E- All are correct .

47- The addition of continuous positive airway pressure (CPAP) into the breathing system causes an increase in all of the following EXCEPT :

- A- FRC
- B- Static compliance of the lung
- C- Dynamic compliance of the lung
- D- Airway conductance
- * E- Work of breathing

48- Patients in diabetic coma can have all the following EXCEPT:

- A- Lactic acidosis
- B- Hyperosmolarity
- C- Ketoacidosis
- D- Hyperlipidaemia
- * E- Hypocalcaemia

49- An asthmatic patient develops acute bronchospasm at the end of an operation for the repair of an umbilical hernia. The possible causes include all the following EXCEPT:

- A- Use of neostigmine to reverse the neuromuscular blockade
- B- A light level of anaesthesia
- C- Irritation of the respiratory tree by the tracheal tube
- D- Use of isoflurane during the anaesthetic
- E- Morphine administration at the end of operation

50- When the patient temperature is 32 C all the following problems may be expected EXCEPT:

- A- Metabolic alkalosis ✓
- B- Impairment of intrinsic clotting cascade ✓
- C- Cardiac dysrhythmias ✓
- D- Platelets dysfunction ✓
- E- Profound peripheral vasoconstriction ✓

51- Signs of a haemolytic transfusion reaction Include all the following, EXCEPT:

- A- Bronchospasm. ✓
- B- Pyrexia ✓
- C- Hypertension ✓
- D- An increase in capillary bleeding ✓
- E- Periorbital oedema ✓

52- Phaeochromocytomas associated with all of the following, EXCEPT:

- A- Are noradrenaline secreting tumours ✓
- B- Can occur anywhere along the sympathetic chain ✓
- C- Are usually benign ✓
- ☒ D- Increased blood volume ✓
- E- Produce excessive amounts of adrenaline ✓

53- Reliable indicators of tissue oxygenation include ONE of the following:

- A- pco2 of arterial blood ✓
- B- pH of arterial blood ✓
- C- PO2 of arterial blood ✓
- D- pH of venous blood ✓
- ☒ E- PO2 of venous blood ✓

54- Which is FALSE concerning jugular venous oxygen saturation monitoring:

- A- Assesses global oxygen extraction ✓
- B- Catheter need to be in the jugular bulb ✓
- C- Detect only a single hemisphere ✓
- ☒ D- Is unaffected by changes in oxygenation of systemic blood ✓
- E- It depends on measurement of partial pressure and saturation of oxygen ✓

55- This ECG (Lead V5) most likely represents



- A- Wolff-Parkinson-White (WPW) syndrome
- B- Atrial fibrillation
- C- Complete heart block
- D- Atrio-ventricular junctional rhythm
- E- Sinoatrial block

56- The following nerves are solely motor in function EXCEPT:

- A- Oculomotor nerve.
- B- Abducens nerve.
- C- Genitofemoral nerve.
- D- Glossopharyngeal nerve.
- E- Spinal accessory nerve.

57- One of the following statements is TRUE with respect to the autonomic nervous system:

- A- The vagus nerve conveys afferent pain fibers.
- B- Post ganglionic sympathetic nerves are myelinated.
- C- All postganglionic sympathetic nerve terminals have adrenaline as neurotransmitter.
- D- Some preganglionic sympathetic fibers directly innervate their target organs.
- E- The cranial parasympathetic outflow arises solely in the medulla oblongata.

58- One of the following symptoms and signs is produced by voluntary hyperventilation:

- A- Carpopedal spasm
- B- Acidosis
- C- Increased cerebral blood flow
- D- Peripheral vasodilatation
- E- decreased cardiac output

59- All of the following solutions are isotonic EXCEPT:

- A- 0.9% saline
- ~~B- 5% glucose~~
- C- 4% glucose and 0.18% saline
- D- Mannitol 10%
- E- Hartmann's solution

60- All of the following are signs for ARDS EXCEPT:

- A- Increase venous admixture
- B- Increase dead space-ventilation
- C- Decreased PaCO₂
- D- Decrease lung compliance
- E- PCWP more than 18mmHg

61- The following statements regarding the anion gap are correct EXCEPT:

- ~~A- The cations used in the calculation of the anion gap are sodium and potassium~~
- B- The anions used in the calculation of the anion gap are chlorides and phosphates
- C- The normal anion gap is between 10 and 18 mmol/L.
- D- Lactic acidosis causes a metabolic acidosis with a high anion gap
- E- Renal failure causes a metabolic acidosis with a high anion gap

62- One of the following occur as a response to major surgery:

- A- Enhanced natriuresis
- B- Hyperglycaemia
- C- Reduced lipolysis
- D- Increased peripheral glucose uptake
- E- Potassium retention

63- ECG changes in hypokalaemia include all of the following EXCEPT:

- A- Reduced P wave
- B- Widened QRS complex
- C- Prolonged QT interval
- D- Reduced height of T wave
- E- Increased height of U wave

64- Storage of blood for transfusion causes ONE of the following:

- A- Raised pH ✓
- B- Raised PCO₂ ✓
- C- Raised plasma bicarbonate ✗
- D- Raised plasma dextrose ✓
- E- Raised 2,3-Diphosphoglycerate ✓

65- Day case surgery is characterized by all the following EXCEPT:

- A- Lower incidence of infection ✓
- B- Lower incidence of respiratory complications ✓
- C- Lower overall costs ✗
- D- Same preoperative laboratory testing as compared to hospitalized patients ✓
- E- Same safety compared to hospitalized patients ✓

66- Placing an internal jugular catheter during a posterior fossa surgery in the sitting position, one is TRUE:

- A- Is absolutely contraindicated ✓
- B- Neck veins should not be used ✓
- C- A skillfully placed catheter is often acceptable ✓
- D- Head-down posture to facilitate placement is always desirable ✗
- E- Brachial veins should always be used ✗

67- The most common complication seen in the recovery room is:

- A- Mild to moderate hyperthermia ✗
- B- Emergence excitement ✓
- C- Bronchospasm ✓
- D- Mild to moderate hypothermia ✓
- E- Cardiac arrhythmias ✓

68- Bradycardia during ophthalmic surgery can be due to the followings EXCEPT:

- A- Pressure on the eye ✓
- B- Traction on external muscles of the eye ✓
- C- Retrobulbar local anaesthesia ✓
- D- High concentration of halothane ✗
- E- Corneal incision ✗

69- During one-lung ventilation, the amount of perfusion to the nondependent lung is determined by all of the following EXCEPT:

- A- The degree of hypoxic pulmonary vasoconstriction in the nondependent lung
- B- The degree of hypoxic pulmonary vasoconstriction in the dependent lung
- C- Surgical manipulation of the nondependent lung
- D- Method used to ventilate the dependent lung
- E- The preoperative condition of the dependent lung

70- Concerning cardiopulmonary bypass, which is TRUE:

- A- Hyperoxia is desirable during hypothermic bypass
- B- During hypothermia, blood viscosity remains unchanged
- C- During rewarming, rectal, tympanic, and esophageal temperatures rise in that order
- D- Systemic air embolism may be caused by unexpected resumption of the heart beat
- E- In the absence of antithrombin III factor in the patient's blood, heparin sensitivity is observed

71- In patients undergoing coronary artery bypass graft surgery, rapid protamine administration MOST likely will decrease, one of the following:

- A- Myocardial contractility.
- B- Cardiac index.
- C- Pulmonary vascular resistance
- D- Systemic vascular resistance
- E- LVSWI (Left ventricular systolic work index)

72- All these medical problems, when present in patient undergoing cataract surgery, are relative contraindications to regional anesthesia with light sedation EXCEPT:

- A- Chronic cough
- B- Shortness of breath when lying flat
- C- Aspirin therapy
- D- Parkinsonian head tremor
- E- Alzheimer disease

73- During Eye surgery under eye block:

- A- Propofol infusions may be necessary
- B- The patient should be asleep to relieve anxiety
- C- The patient should be aware, calm and cooperative during the procedure
- D- Dentures should be removed
- E- Movements are allowed

74- All the following statements concerning Aprotinin are true EXCEPT:

- A- It may cause hypersensitivity responses ✓
- B- It reduces the inflammatory response following extracorporeal circulation ✓
- C- It may be administered intravenously as a bolus injection ✓
- D- It reduces bleeding following open heart surgery ✓
- E- It inhibits plasmin and plasmin-activator ✓

75- Tetralogy of Fallot exhibits the following EXCEPT:

- A- Pulmonary stenosis ✓
- ✗ B- Atrial septal defect
- C- Right ventricular hypertrophy ✓
- D- The aorta overrides the right ventricle ✓
- E- Ventricular septal defect ✓

GOOD LUCK